

What is claimed is:

1. A method of manufacturing a back light type display panel comprising:

a first step of forming on a transparent base film an opaque area of a thick layer of toner particles and a transparent area of a thin layer of toner particles;

a second step of covering the opaque and transparent areas of the base film with a transparent protection film on which a thermoplastic adhesive agent is coated to form a laminate member of thick and thin layers of toner, the adhesive agent and the protection film;

a third step of vacuuming the laminate member and its surrounding;

a fourth step of heating the laminate member to be lower for the toner to melt and sufficiently high for the adhesive agent to have a characteristic of tack and pressing opposite surfaces of the laminate member at a first pressure by a pair of pressing boards; and

a fifth step of heating the laminate member to be sufficiently high for the toner to melt, thereby fixing the toner to the base film.

2. A method of manufacturing a back light type display panel comprising:

a first step of forming on a transparent base film an opaque printed area of a thick layer of toner particles;

a second step of covering the opaque printed area with a transparent protection film on which a thermoplastic adhesive agent is coated to form a laminate member of the base film, thick and thin layers

of toner, the adhesive agent and the protection film;

a third step of vacuuming the laminate member and its surrounding;

a fourth step of heating the laminate member to be lower for the toner particles to melt and sufficiently high for the adhesive agent to have a characteristic of tack or quick stick; and

a fifth step of heating the laminate member to be sufficiently high for the toner particles to melt, thereby fixing the toner to the base film.

3. The method as claimed in claim 1,

wherein said fourth step comprises a step of heating a pressing board to heat the laminate member.

4. The method of manufacturing as claimed in claim 1,

wherein said fifth step comprises a step of heating the pressing boards to heat the laminate member.

5. The method of manufacturing as claimed in claim 4,

wherein said fifth step comprises a step of heating the pair of pressing boards while pressing the laminate member at a second pressure.

6. The method as claimed in claim 1,

wherein said fifth step further comprises a step of carrying the laminate member to a heating chamber and a step of blowing heated air over it.

7. The method as claimed in claim 1,

wherein said third step comprises a step of inserting the laminate member between the pair of pressing boards, a step of forming a hermetic space by the pressing boards and a step of evacuating air from the hermetic space for vacuuming.

8. The method as claimed in claim 7,

wherein said step of evacuating air is carried out while the laminate member is inserted between the pair of pressing boards.

9. The method as claimed in claim 1,

wherein said step of forming the opaque printed area comprises a step of forming a first layer of the toner particles on the base film and a step of forming a second layer of the toner particles on the first layer of the toner.

10. The method as claimed in claim 9,

wherein the second layer of the toner particles is formed so that the periphery thereof can be located within the periphery of the first layer of the toner particles.

11. The method as claimed in claim 1,

wherein the radius of corners of the opaque printed area adjacent to the transparent printed area is larger than 0.3 mm.

12. A back light type display panel comprising:

a transparent base film;

an opaque layer of printed toner particles printed on said base film;

a transparent layer of ink printed on said base film;

wherein the opaque layer of printed toner particles and the transparent layer of printed ink are disposed in planes in parallel with said base film to form a display pattern that can be seen through the transparent base film from one side of the base film when the display pattern is illuminated from the other side thereof, and

wherein the transparent display pattern is defined by a border line between the layer of the toner particles and the layer of the ink.

13. A back light type display panel comprising:

a transparent base film;

a transparent layer of printed toner particles printed on said base film so that transmission density thereof gradually changes;

a transparent layer of color ink printed on said base film;

wherein said transparent layer of printed toner particles and the transparent layer of printed color ink are overlapped in a line of vision to form a mixed color display pattern that can be seen through the transparent base film from one side of the base film when the display pattern is illuminated from the other side thereof.

14. The back light type display panel as claimed in claim 13,

wherein said transparent layer of toner particles includes a higher perceptive area and a lower perceptive area in transmission density, and

wherein the higher perceptive area is made larger than the lower perceptive area.

15. The back light type display panel as claimed in claim 13,

wherein said opaque layer of toner particles comprises two layers of the first and the second toner particles.

16. The back light type display panel as claimed in claim 15, wherein said two layers of the first and second toner particles are different in toner density from each other.

17. The back light type indicator as claimed in claim 15, wherein said first toner particles are black and said second toner particles are one of white color and red color.

18. The back light type indicator as claimed in claim 12, further comprising a transparent protection film coated on said base film, wherein said transparent layer of printed ink is printed on said protection film on the side thereof far from said base film.

19. The back light type display panel as claimed in claim 18, said transparent layer of printed ink is constituted of a plurality of color ink layers.

20. The back light type display panel as claimed in claim 12, wherein said transparent layer of ink includes at least one of a direction indicator, a display section for alarming, a scale mark and a letter.

21. The back light type display panel as claimed in claim 12, said transparent layer of printed comprises a plurality of blue ink

layers to form a color mixture.

22. The back light type display panel as claimed in claim 12, wherein said opaque printed area is formed so that periphery of the layer of toner particles have a gradually inclining slope.

23. A back light type display panel comprising:
a transparent base film;
a layer of printed toner particles printed on a rear surface of said base film;
a transparent protecting film covering said transparent layer of printed toner particles; and
a light conductive plate disposed on a surface of said transparent protecting film away from said layer of printed toner particles;
wherein said protecting film is made of ultraviolet curing epoxy resin whose hardening shrinkage degree of volume is less than 5 %, and said light conductive plate is made of one of polycarbonate resin and acrylic resin.

24. The back light type display panel as claimed in claim 23, wherein said ultraviolet curing epoxy resin is made of cationic polymer.

25. The back light type display panel as claimed in claim 23, wherein said protecting film includes at least one of beads and fillers as a mixture.

26. The back light display panel as claimed in claim 23, further comprising a luster controlling layer disposed on said base film.